

AMENDMENTS TO THE CLAIMS

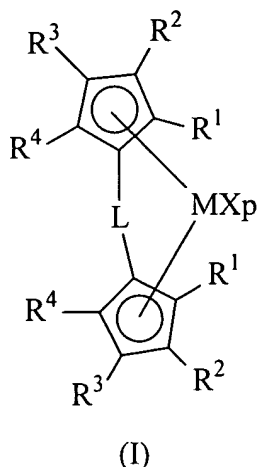
1. (currently amended) A process for obtaining porous propylene polymers optionally containing up to 10% by mol of derived units of ~~one or more alpha-olefins~~ at least one alpha-olefin of formula $\text{CH}_2=\text{CHZ}$ wherein Z is H or a $\text{C}_2\text{-C}_{10}$ alkyl radical, comprising the step of polymerizing, in a polymerization medium, propylene and optionally said ~~one or more alpha-olefins~~ at least one alpha-olefin, under polymerization conditions, in the presence of a catalyst system comprising at least a metallocene compound; ~~said process being characterized in that~~ wherein:
 - a) the catalyst system is supported on an organic porous polymer; and
 - b) at least part of the polymerization reaction is carried out in the presence of hydrogen.
2. (currently amended) The process according to claim 1 ~~being further characterized in that~~ wherein the polymerization medium is liquid propylene optionally containing minor amounts of an inert hydrocarbon solvent or ~~of one or more~~ at least one comonomer of formula $\text{CH}_2=\text{CHZ}$.
3. (currently amended) A process for obtaining a porous propylene polymer optionally containing up to 10% by mol of derived units of ~~one or more alpha-olefins~~ at least one alpha-olefin of formula $\text{CH}_2=\text{CHZ}$ wherein Z is H or a $\text{C}_2\text{-C}_{10}$ alkyl radical, comprising the following steps:
 - a) prepolymerizing in a first polymerization medium propylene optionally with ~~one or more alpha-olefins~~ at least one alpha-olefin of formula $\text{CH}_2=\text{CHZ}$ wherein Z is H or a $\text{C}_2\text{-C}_{10}$ alkyl radical in the presence of a catalyst system supported on an organic porous polymer, said catalyst comprising a metallocene compound; wherein the first polymerization medium is liquid propylene; and
 - b) contacting propylene and optionally ~~one or more alpha-olefins~~ at least one alpha-olefin of formula $\text{CH}_2=\text{CHZ}$ wherein Z is H or a $\text{C}_2\text{-C}_{10}$ alkyl radical under polymerization conditions in the presence of hydrogen and the

prepolymerized catalyst system obtained in step a), in a second polymerization medium.

4. (currently amended) The process according to claim 3 wherein the second polymerization medium ~~in step b)~~ is liquid propylene optionally containing minor amounts of an inert hydrocarbon solvent or ~~of one or more~~ at least one comonomer of formula $\text{CH}_2=\text{CHZ}$.
5. (currently amended) The process according to ~~anyone of claims 1 to 4~~ claim 1 wherein the organic porous polymer has porosity due to pores with diameter up to $10\text{ }\mu\text{m}$ ($100000\text{ }\text{\AA}$) higher than 0.1 cc/g .
6. (currently amended) The process according to ~~anyone of claims 1 to 5~~ claim 1 wherein in the organic porous polymer ~~the~~ a total porosity due to ~~of~~ all pores whose diameter is comprised between $0.1\text{ }\mu\text{m}$ ($1000\text{ }\text{\AA}$) and $2\text{ }\mu\text{m}$ ($20000\text{ }\text{\AA}$) is at least 30% of ~~the~~ a total porosity due to of all pores whose diameter is comprised between $0.02\text{ }\mu\text{m}$ ($200\text{ }\text{\AA}$) and $10\text{ }\mu\text{m}$ ($100000\text{ }\text{\AA}$).
7. (currently amended) The process according to ~~anyone of claims 1 to 6~~ claim 1 wherein ~~the~~ a amount of hydrogen present during the polymerization reaction is more than 1 ppm.
8. (currently amended) The process according to ~~anyone of claims 1 to 7~~ claim 1 wherein the catalyst system containing ~~a~~ the metallocene compound is ~~obtainable~~ obtained by reacting:
 - a) ~~a~~ the metallocene compound;
 - b) at least an alumoxane or a compound ~~able to form~~ that forms an alkylmetallocene cation; and
 - c) optionally an organo aluminum compound.
9. (currently amended) The process according to claim 8 wherein the catalyst system is supported on an organic porous polymeric support according to a process comprising the following steps:
 - (a) preparing a catalyst solution comprising ~~a~~ the catalyst system and a solvent;
 - (b) introducing into a contacting vessel:
 - (i) a porous support material in particle form having a total pore volume,

and

- (ii) a first volume of the catalyst solution not greater than the total pore volume of the porous support material introduced;
- (c) discharging the material resulting from step (b) from the contacting vessel and suspending it in an inert gas flow, under such conditions that the solvent evaporates; and
- (d) reintroducing at least part of the material resulting from step (c) into the contacting vessel together with ~~another~~ a second volume of the catalyst solution not greater than the total pore volume of the reintroduced material.
10. (currently amended) The process according to ~~any one of claims 1 to 9~~ claim 1 wherein the metallocene compounds belong to formula (I):



wherein

M is a transition metal belonging to group 4, 5 or to the lanthanide or actinide groups of the Periodic Table of the Elements;

the substituents X, equal to or different from each other, are monoanionic sigma ligands selected from the group consisting of hydrogen, halogen, R^6 , OR^6 , $OCOR^6$, SR^6 , NR^6_2 and PR^6_2 , wherein R^6 is a linear or branched, saturated or unsaturated C_1 - C_{20} alkyl, C_3 - C_{20} cycloalkyl, C_6 - C_{20} aryl, C_7 - C_{20} alkylaryl or C_7 - C_{20} arylalkyl group, optionally containing ~~one or more~~ at least one Si ~~or~~ and Ge ~~atoms~~ atom;

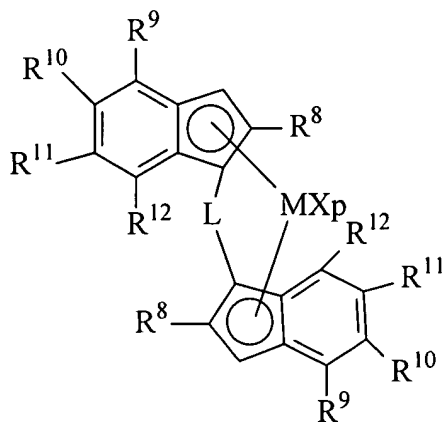
p is an integer equal to the oxidation state of the metal M minus 2;

L is a divalent bridging group selected from C_1 - C_{20} alkylidene, C_3 - C_{20} cycloalkylidene, C_6 - C_{20} arylidene, C_7 - C_{20} alkylarylidene, or C_7 - C_{20} arylalkylidene

radicals optionally containing heteroatoms belonging to groups 13-17 of the Periodic Table of the Elements, and silylidene radical containing up to 5 silicon atoms;

R^1 , R^2 , R^3 and R^4 , equal to or different from each other, are hydrogen atoms, or linear or branched, saturated or unsaturated C_1 - C_{20} -alkyl, C_3 - C_{20} -cycloalkyl, C_6 - C_{20} -aryl, C_7 - C_{20} -alkylaryl, or C_7 - C_{20} -arylalkyl radicals, optionally containing ~~one or more heteroatoms~~ at least one heteroatom belonging to groups 13-17 of the Periodic Table of the Elements; or two adjacent R^1 , R^2 , R^3 and R^4 form ~~one or more~~ at least one 3-7 membered ring ~~optional~~ optionally containing heteroatoms belonging to groups 13-17 of the periodic table; said rings can be substituted by ~~one or more~~ at least one hydrocarbon ~~radicals~~ radical containing from 1 to 20 carbon atoms ring optionally containing heteroatoms belonging to groups 13-17 of the periodic table.

11. (currently amended) The process according to claim 10 wherein the metallocene compounds belong to formula (II):



(II)

wherein M, X, L and p have the meaning as in claim 7;

R^8 , equal to or different from each other, are linear or branched, saturated or unsaturated C_1 - C_{20} -alkyl, C_3 - C_{20} -cycloalkyl, C_6 - C_{20} -aryl, C_7 - C_{20} -alkylaryl, or C_7 - C_{20} -arylalkyl radicals, optionally containing ~~one or more heteroatoms~~ at least one heteroatom belonging to groups 13-17 of the Periodic Table of the Elements;

R^9 , R^{10} , R^{11} and R^{12} , equal to or different from each other, are hydrogen atoms, linear or branched, saturated or unsaturated C_1 - C_{20} -alkyl, C_3 - C_{20} -cycloalkyl,

C₆-C₂₀-aryl, C₇-C₂₀-alkylaryl, or C₇-C₂₀-arylalkyl radicals, optionally containing ~~one or more heteroatoms~~ at least one heteroatom belonging to groups 13-17 of the Periodic Table of the Elements; or they can join to form a condensed 4-7 membered ring.

12. (currently amended) A propylene polymer optionally containing up to 10% by mol of derived units of ~~one or more alpha-olefins~~ at least one alpha-olefin of formula CH₂=CHZ wherein Z is H or a C₂-C₁₀ alkyl radical having the following features:

[-](i) a melting point >100°C;

[-](ii) a total porosity expressed as percentage of voids %V/V₁ >15; and

[-](iii) a molecular weight distribution Mw/Mn<4.